TRACKING VACCINE PREVENTABLE DISEASES

WHAT IS THE PUBLIC HEALTH PROBLEM?

- Dramatic declines in the incidence of vaccine-preventable diseases have created a need for surveillance systems that are sensitive enough to detect rare cases and isolated outbreaks.
- As new vaccines are licensed and recommended, new strategies for monitoring the incidence of additional diseases are needed.
- Some of the diseases that have been newly identified as vaccine-preventable do not have easily recognizable symptoms. These diseases require enhanced surveillance methods and integration into an already complex surveillance system.

WHAT HAS CDC ACCOMPLISHED?

CDC provides leadership and guidance for vaccine-preventable disease surveillance, investigation, and outbreak control throughout the United States. Recent accomplishments include documenting the elimination of naturally acquired polio and indigenous measles from the United States. Scientific assistance provided to state and local health departments has enabled disease trends to be monitored and has demonstrated the effectiveness and impact of vaccines in controlling rubella, mumps, tetanus, diphtheria, *Haemophilus influenzae* type b, and chickenpox.

Accomplishments have also been made through the New Vaccine Surveillance Network which recently expanded to a third site (Children's Hospital Medical Center – Cincinnati) in September, 2002. This network has been successful in generating research regarding pneumococcal disease and respiratory infections in children and has been instrumental in establishing immunization policy in the U.S.

Example of program in action: Illness from nine infectious diseases (i.e., smallpox, diphtheria, pertussis, tetanus, paralytic polio, measles, mumps, rubella, and *H. influenzae* type b) has decreased by 95%–100% since the beginning of the 20th century. Surveillance challenges presented by newly licensed vaccines against diseases such as chickenpox, which is not nationally notifiable, have led CDC to develop enhanced surveillance methods that include documentation of vaccine usage and the impact of vaccine recommendations. Results from three sites indicate a decrease in cases of chickenpox in all age groups, with the greatest decline occurring among children aged 1–4 years, the primary target group for vaccination. Results also show that the varicella vaccine is more than 90% effective in preventing moderate to severe cases of chickenpox when given routinely.

WHAT ARE THE NEXT STEPS?

The need for enhanced surveillance to define disease burden and monitor vaccine impact continues. New approaches to surveillance include increased use of a) state-based immunization registries, b) data from managed-care organizations, and c) state-based laboratory and proprietary hospital discharge databases.

For more information on this and other CDC programs, visit www.cdc.gov/programs *February 2003*